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Loyola Digest
Wilson Education Index

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Twenty-eighth Annual Conference on Educational Measurements

Held at Indiana University
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Measurement in Guidance at Evansville

ALEX JARDINE, Director of Guidance,
Evansville Public Schools

TESTING on a city-wide basis was begun in Evansville five years ago. Since that time the program has been refined and expanded, and present plans call for continuous refinement and expansion for some years to come. As we see it, testing serves a twofold purpose. First, and most important, it offers information about the abilities, capacities, and achievement of the child. When a child enters our school, a cumulative record folder is begun for him. In his folder are social, educational, and health record cards upon which his teachers, the nurse, the deans, and others enter information as he progresses through school. Adequate space is provided on these cards for test data. A second purpose of the program is to give all of us, from the teacher to the superintendent, a picture of the performance of all the children.

Our city-wide program so far has included only two general types of tests. Tests of specific abilities so far have been given only to small groups. These I will mention briefly later. The first general type of test used is that of mental ability; the second is the achievement type. The California Test of Mental Maturity is given to all pupils in the elementary schools, from the first grade on. During the fifth year all children are given the Henmon-Nelson Test of Mental Ability, and in the eighth grade all children are given the Otis Test of Mental Ability. For the first time the American Council on Education Psychological Examination was given to all seniors in the high schools this year.

During the second week of the 1B semester all beginning pupils are given the Metropolitan Readiness Test. All 2A pupils are given the Metropolitan Achievement Test, which is basically a test of reading. During the 4B semester the Stanford Achievement Battery is given. This test checks achievement in reading, arithmetic, and spelling. A similar test, the Metropolitan Intermediate Battery, is given in the sixth grade. A mathematics prognostic test and the Elementary Form of the Iowa Silent Reading Test are given in the eighth grade. To complete the testing program, the Iowa Silent Reading Test, High School and College Form, and the Cooperative English Test are given to all high school seniors. It will be noted that a test of some kind is given at all grade levels of the elementary and junior high school except the third and seventh grades. As yet the high school testing program, except in special fields, is limited to the twelfth grade.

This program was developed by a committee of deans, counselors, and guidance workers under the leadership of the director of guidance. The committee recommended that in each building the teachers best qualified should give these various tests in that building. So far as has been possible, the tests have been scored in the guidance office and the papers returned to the teacher so that they may be

studied and the results entered in the cumulative record. Many teachers prefer to mark their own papers for the practical benefits which accrue from studying the child's work in detail. In most instances, the achievement tests are given early in the semester so that the teacher may gather specific information about the abilities of the children in her group, and so that she may have an opportunity to plan her teaching to capitalize on this information. Increasingly we are receiving at the close of the semester calls from teachers who want other forms of the tests given early in the semester so that they may measure the progress made by individual pupils and even in some cases by the whole class. In cases where a number of factors may have resulted in excess retardation, school principals are urged to call upon the services of the special education instructor for help. This teacher administers individual tests of the Binet type, and calls upon the health department, the lip reading teacher, and the speech correction teacher as their services are needed. Some few pupils in each building are placed in the special education class under the leadership of a rather skilled instructor. This program is flexible and permits pupils to move in and out of the special class as their performance permits. In some cases, pupils go along with their classes in all but the particular subject in which they need help. In other cases, pupils spend most of their time in the special class but leave it to join the group in mechanic arts, home economics, and physical education.

Teachers are frequently advised not to put too much emphasis on test results, a shortcoming that is more predominant than any other. Teachers whose pupils fail to measure up to an arbitrary norm are prone to want to retard the pupil until he has measured up to the norm. This is, I believe, because of the long-time practice we have had in the schools of placing so much faith in the "passing mark." To the credit of our teachers, I must say that in the main they are willing to call upon the services of our special department to help solve their problem rather than to retard the child.

Because of the fact that in the first eight grades the cumulative record of the pupil is kept by the teacher in the home room, I believe that more practical use is made of test results there than in the high school. In the secondary schools the cumulative record cards are filed in the assistant principal's office. Although the records are kept open to teachers and are kept up-to-date, they are not so widely used. Many home room advisers and counselors do use the records extensively, but frequently time and distance to the office deter the maximum use of the record. Because of the physical organization of the high school, the plan in use seems to be the most nearly satisfactory, but we plan to continue working on the problem until we have evolved a better solution. It may be worth while to note that a duplicate of the educational record card is filed in the superintendent's office when a pupil is graduated. When he is withdrawn from the city or county schools, his entire record is placed in the superintendent's office. If he returns to one of our schools, his record is sent out to the school which he re-enters. A plan has

been worked out whereby the record of a pupil transferring from one public school to another is sent by our delivery service to the pupil's new school. Vanderburgh County public schools have adopted the same cumulative record system and work with the city in a testing program similar to ours. There are no high schools in the county, but all county eighth grade pupils are given the same tests as are the city pupils.

Mimeographed lists of freshman pupils showing the pupil's name, his age, and his grade placement on each test are prepared for each city high school. These data are given to all freshman instructors so that they may be better informed of the abilities of their new charges. This practice in a measure helps to overcome the lack of the immediate presence of the pupil's whole record card. The teachers may consult this file in the office.

Earlier I made some reference to the testing just begun in the senior year. Like most school systems, we have felt that we have been doing too little to bridge the gap between our schools and the college. In conference with the admissions office and testing service of this University, we have worked out a plan which we hope will help to solve the problem. All high school seniors in Evansville are given the examinations usually administered to freshmen entering Indiana University in the fall. We purchase the type of tests which require machine-scored answer sheets and then send the sheets to the University to be scored, after which they are returned to us. We have found the following practical uses of these test results. First of all, the test scores point out definite weaknesses which may be remedied to a degree if the student is bent on entering college. Secondly, the high school principal is asking the parents of each college-bound student to call at his office to go over the student's complete scholastic, extracurricular, and test record, and to discuss frankly the youngster's chances of success or failure in his college work. It should be noted here that the University does not keep a record of the student's performance but will exempt the student from the campus examination if his record is indicated on the transcript. Any student desiring to take the test again may do so when entering the University. Arrangements have likewise been made with Purdue University on the freshman mathematics examination. This series will be given shortly to those students indicating that they will enter a technical school in the fall.

We use a few special tests which I should like to mention briefly in closing. One is a pitch test given to all fourth-graders by the music department in order to help music teachers discover special musical talents of children. Another is an art selection and appreciation test given to children in the lower grades. One set of tests which deserves special mention is that given prospective entrants to the Evansville Mechanic Arts High School. This set includes the revised Minnesota Paper Form Board Test and an achievement test in mechanical drawing.

As yet we have done little in the field of testing work-study habits, attitudes, and special skills. This seems to be the direction which our program may next take.

In conclusion, I should like to point out that in our program the emphasis has so far been placed on securing more information about the pupil. Our effort has been in the direction of putting into practice the idea of getting each youngster to live up to the limit of his abilities. Although I stated at the beginning that we have used these data to measure group achievement, we have done this more within schools than on a city-wide basis. If attempted on the latter basis, there is a tendency for schools to make comparisons which are unfair and which are not true. Whenever test data are released, an effort is made to make them as nontechnical as possible. Although in effect for but a few years, the program already seems to be paying dividends.

Measurement in Guidance

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IT is generally recognized that measurements for individual abilities, personality characteristics, and occupational potentialities are still in a somewhat embryonic state. The purpose of this address is to review briefly the present status of some of the available beginnings in the science of measurement and to indicate in a very sketchy fashion the trends toward which present research and investigation point.

There is no limit to the number of measurements that might be made of an individual except the very practical one of justifying the time and expense which such measurements may involve. The crucial task, so far as guidance is concerned, is the determination of a limited number of facts about individual pupils which may be of high significance in determining the potentialities of those pupils and assisting in their wisest development. School marks, ratings, and tests of educational achievement have rather obvious values for both general educational and specific vocational guidance. The significance of mental age and intelligence quotient are now considered somewhat less simple than was originally supposed. Tests of manual and mechanical abilities, when adequately developed, would seem to offer much promise for vocational guidance, but there is still needed a vast amount of research before we can be certain of the relationship between test scores and the probability of success in a given manual or mechanical occupation. Tests of social ability, personality, and attitude are still in an experimental stage and we need to be cautious about accepting the claims of authors and publishers in regard to their utility. The same may be said for the so-called interest inventories, questionnaires, or tests. Guidance workers should be aware of the early claims made by testers in the field of intelligence and the necessary modification of those claims by subsequent research and experience, and by that knowledge should be forewarned against too credulous an acceptance of the broad claims made by some of those now engaged in attempts to measure personality, attitudes, and interests.

Mental tests and educational achievement tests serve rather obvious purposes in helping us to understand the pupil's present accomplishment and his probable future accomplishment. They are useful in helping us to achieve various instructional and supervisory objectives which have as their ultimate aim the improvement of educational content and procedures which affect individual pupils. They are of significance to guidance broadly, therefore, as they influence content and methods, and are particularly significant in their relation to the problems presented by individual pupils. Group mental tests are frequently given at various checking levels in the elementary grades, such as the first primary grade, the third or fourth grade, the sixth or seventh grade. Some school systems give ninth-grade pupils a group mental test. Individual Stanford-Binet tests, or others

of similar character, are frequently used with borderline cases. Teachers have access to these test results and are thereby assisted in their interpretation of the present and future probable accomplishment of the child. Data in relation to mental ability are recorded on the cumulative record card which accompanies the child to high school and are there available for the information of teachers, counselors, and administrators.

We should be careful to remember that these mental tests do not tell us the entire story concerning any individual. A safe generalization regarding them is that they indicate fairly well the *ability* of the individual to learn the ordinary academic subjects. They do not, however, tell us anything about the ambition of the student, his willingness to work, his persistence, his laziness, his indifference, his good or bad habits, his nervous stability, or his qualities of character. These qualities profoundly affect student achievement and may be present in many different combinations with different degrees of mental ability. This latter fact was too frequently overlooked by early workers in the testing field and as a consequence enthusiasts often overrated the usefulness of mental test scores. We have a saner and more conservative attitude toward such instruments today, an attitude which is reflected in the growing tendency to keep the term "intelligence" out of the title and to use instead such terms as learning aptitude tests, scholastic aptitude tests, tests of academic learning ability, etc. The foregoing titles more nearly indicate, it is thought, what the so-called mental tests really seem to test than does the term "intelligence test." They are undoubtedly highly related to the ability to succeed in school subjects of a verbal or abstract character, but they do not indicate whether or not the pupil will use that ability consistently and persistently.

Another consideration in relation to these scholastic aptitude tests, particularly in connection with high school pupils, is that they do not seem to measure equally well an individual's ability to succeed in different kinds of academic subjects. We note pupils with records of pronounced differential achievement, high in some subjects and low in others. Is this difference in success in different subjects due to greater liking for one subject than for the other, better adaptation of teaching methods, a more harmonious pupil-teacher relationship, or stronger motivation, or is it not possible that our measure of general ability fails to indicate accurately ability to succeed in different kinds of secondary school subjects? Here we have to keep in mind the fact that a certain antithesis exists between measures of "general ability" and the analytic approach leading to a mental pattern or profile of abilities. The latter discloses more nearly the peaks and valleys of mental organization; the former is a statistical average which fills in the valleys and levels down the peaks so as to present a plateau or "general mental level." Differential achievement will not surprise us if we keep that fact in mind and are always aware of the many other factors which may account for greater pupil success with some subjects than with others.

A certain amount of research is in progress at the present time

which attempts to break down the general concept of intelligence into a number of more basic traits. Should such breakdowns eventually become well established, there will remain to be done much important research to reveal the significance of these so-called "unit traits" for educational and vocational guidance. Results at present are too tentative to enable one to venture a prediction as to the ultimate outcome of these efforts and their probable relationship to guidance.

Standardized achievement tests have demonstrated their right to a high place among measuring instruments of especial usefulness in guidance. In general, it may be said that adequate measures of what an individual achieves in a subject are the best measure of what he will continue to achieve in that subject in the future. An achievement test score in a subject that is of considerable significance in the educational and vocational program of a student is apt to be highly valuable in guidance. Achievement tests not only give a picture of present accomplishments but they serve as predictors of probable future achievement. Certain school subjects are continuous throughout the elementary, junior high, and high school levels. English and the social studies would be examples of continuous subjects. In these subjects the best predictor of future achievement is the level of achievement attained at the time of the prediction. The good reader in the elementary school continues to be a good reader throughout junior high and high school; the same is true for language usage, grammatical information, and spelling. Achievement tests in these subject-matter fields indicate probable future accomplishments better than any other single predictor will.

Examples of semicontinuous subjects would be the sequence in mathematics in which arithmetic in the elementary school is followed by algebra, plane and solid geometry, and trigonometry in the high school. What is a good predictor of ability in mathematics in the high school? Arithmetic test scores will predict ability in algebra or geometry as well as, or possibly better than, the special aptitude or prognostic tests that are available. Many of the basic skills of arithmetic are used in the various high school subjects in the field of mathematics; there is, consequently, a continuity of certain fundamental elements but a discontinuity of subject names. Standardized arithmetic tests are good predictors, therefore, of ability in high school mathematics.

Some school subjects are classed as discontinuous; that is, they do not run throughout both grades and high school. They are most generally initiated in the upper years of the junior high school or in the senior high school. Modern languages would be placed in this category. The prediction of future success in the discontinuous subjects is a more difficult matter. If the subject requires much textbook study and verbal learning, intelligence tests and reading comprehension tests usually have some predictive value. Attempts to devise special aptitude tests for foreign languages have not met with great success. Prognostic tests have fared somewhat better, but here it may be noted that elements of the English language, such as reading comprehension, vocabulary, and understanding of grammar, have often

been included as important elements in the predictors. More work will have to be done on such prognostic tests before one can be certain of predictions based upon them. Individuals earning scores in the upper or lower brackets may be advised with more definiteness than can be those with scores in the middle group.

There is a strongly-felt need for predictors in the field of vocational training. How are students to be selected for entrance into specific occupations? On what basis can one safely advise one student to go into the mechanical field and another to go into routine semiskilled occupations and another to go into the business trades? The field of mechanical abilities has been the subject of a number of tests, some of the mechanical assembly type and some of the paper-and-pencil type. Unfortunately, but few of the tests in this field seem to satisfy administrators of vocational training for trade and industrial pursuits. It almost seems that high faith in these instruments as predictors of success in skilled mechanical occupations is in direct proportion to one's lack of knowledge of and experience with industrial vocational training. I know of one trade school which tried to use the widely advertised mechanical assembly test of one author for six years and was forced to abandon it because it seemed to possess no validity as a test of probable success in the mechanical field. Another vocational school used the same test for five years and reached the same conclusion regarding its utility. The paper-and-pencil tests of mechanical ability have been studied with various results, one conclusion being that one might as well flip a coin to predict the mechanical ability of students as to use the results of a number of these tests. When instruments of measurement apparently fail in many instances to satisfy any one except their authors and publishers, it is evident that much research work remains to be done in relation to them before they can be recommended as predictors. One of these test batteries, however, which was developed at the University of Minnesota, seems to have considerable promise. Further research based upon the results of the use of this battery with workers in a wide variety of mechanical trades ought to yield results which will be more helpful than any we have at the present time.

A goodly number of these so-called mechanical aptitude tests have been validated upon the basis of grades earned by students in courses of "industrial arts" character. The assumption has then been made that the same relationship would obtain between scores earned on the test and success in mechanical occupations that obtained between scores on the test and grades earned in industrial arts courses. Whenever definite proof is forthcoming that this assumption is correct, it will be time to begin to place reliance upon such tests as true indicators of "mechanical aptitude." Until then it would seem to be a wiser policy to withhold judgment, and it would certainly not seem wise to place very much dependence upon them.

Individuals unacquainted with guidance often say that trade tests are used by industry to aid in the selection of workers, and therefore can be used in guidance to aid in selecting individuals who ought to be encouraged to undertake certain kinds of vocational training.

That position appears logical to one who does not understand that trade tests are in reality achievement tests. An individual says he is a qualified worker in a particular trade, and is given a trade test for that occupation by the employment manager. The job applicant shows by his test results whether he really knows the trade that he professes to know. He may reveal that he is merely a novice at the work, or of advanced apprenticeship ability, or of expert ability. The trade test is an achievement test and can be used for selecting workers for specific jobs. Such a test, however, cannot be used for determining *aptitude* for an occupation. It cannot be given to secondary school pupils who have not been exposed to work of that character with the expectation that it will reveal fitness for the occupation. Selecting workers in industry on the basis of testing their achievement is a very different thing from selecting an appropriate kind of work for young people who do not have a background of working experience.

It is entirely possible for industry to select workers for low-grade, routine, manipulative kinds of work wherein finger or hand dexterity are the chief requirements. A number of dexterity tests are in use and could be administered by schools as well as by industrial establishments. The number of jobs requiring dexterity is legion, but a difficulty with most of them is that they are undesirable kinds of work towards which to direct young people as a life-time's occupation. The greater numbers of these occupations are learned "on the job" under the supervision of the foreman or of a fellow-worker, and the time required for their mastery varies from a few hours to a few weeks. The secondary school or even the trade school will not concern itself with selecting individuals for occupations of that character. As a consequence, while tests of dexterity can be used by schools, guidance workers seldom concern themselves with such tests because occupations for which they indicate fitness are generally routine and of low grade.

Various tests have been devised which purport to test for clerical aptitude. One test was sold widely for more than ten years which claimed to be a prognostic test of stenographic ability. Independent workers in different places studied the results of the test and found that it did not seem to possess validity, it did not do what its makers claimed it would do, that is, it did not discriminate between those who were likely to succeed in the study of shorthand and those who were not. After advertising this test widely for ten years and selling considerable numbers, the publishing company decided to make a research study to determine whether the critics were right. Whatever the results of their research, the publishers ceased to advertise the test and the presumption is that it was found not valid as a prognostic test. A conclusion of this kind, reached after about ten years of advertising a test, ought to warn counselors not to be gullible regarding the claims put forth in favor of certain tests. Authors and publishers are only human and may be inclined to ascribe greater value to the product of their brains (or presses) than the actual facts may warrant.

In general, tests of clerical aptitude are tests of ability to follow directions. The items of arithmetical computation included in such tests are seldom especially difficult. Can one copy names, letters,

and numbers according to instructions? Can one check pairs of numbers and names, and file numbers by size and names by alphabetical arrangement? The foregoing types of activity are frequently those demanded of certain clerical workers and theoretically these clerical aptitude tests should indicate relative degrees of probable success in such clerical tasks. Unfortunately, there is no standard definition for the occupation of "clerk"; workers bearing that general title perform a great variety of different services under different combinations in different offices. While these tests might be valid for some clerical work, they might be far from good predictors for other clerical occupations. Individuals who have worked with some of these clerical tests frequently say that a test of general intelligence will yield as satisfactory results in the employment of clerical workers as will the clerical aptitude tests. It would seem fair to say that more research data are needed before one will be sure of predictions based upon the performance of individuals in a number of the clerical aptitude tests now available. A counselor might well experiment with such tests, regarding the results as tentative until he has sufficient data to pass a well-considered judgment upon the usefulness of individual tests of that nature.

Art ability tests and musical ability tests are fewer in number than are mechanical aptitude and clerical aptitude tests. Just how useful these tests are for guidance workers only time can tell. Some schools of music are using the musical ability tests in combination with other factors to admit or retain students. Specialists in the field of music or of art might be better able to make wise use of such instruments than would counselors untrained in those special fields.

A field of testing which is coming into prominence at the present time is that having to do with so-called tests, inventories, or questionnaires related to personality. The value of these in guidance is not yet demonstrated with any finality. Workers lack a general agreement concerning a definition of personality or concerning the number and nature of the traits of which it is composed. There is not even agreement among all workers that personality traits exist; some authorities insist that behavior, and consequently personality, depends largely upon the immediate situation. A boy may be submissive in the classroom but dominant upon the playground, honest in money matters but dishonest in taking a test, an extrovert in some matters but an introvert in others. If one is a behaviorist he will probably say that personality is the sum total of an individual's behavior in social situations. We must bring in, also, the inward feeling-tone engendered by the situation, because the feeling-tone is a part of one's "behavior in social situations."

From the preceding point of view any study of personality must include tests of intelligence and tests of educational achievement, since these affect our behavior in social situations. Mental ability has always been recognized as one of the components of personality, but ability in English and general knowledge would probably come in the same field since they affect us in social situations.

Undoubtedly there is a whole complex of attributes back of intelligence and back of various mental skills which have thus far de-

fied precise analysis but which unquestionably play a significant role in human adjustment.

Psychologists have attempted to study personality from several different approaches. Tests in which personality is studied as a whole qualitatively and intensively make what is called the global approach. Tests which seek to analyze personality into its component parts make the atomistic approach. The free-association method, the disguised and partially disguised tests, so-called adjustment inventories, and factorial analysis have been used, each worker feeling certain that his particular "test" gives all the answers regarding personality. The psychologists very definitely disagree with each other regarding the merits of their respective tests. What is the guidance worker to do when the doctors disagree? An entirely safe suggestion is that he would be well advised to wait until further evidence is in before accepting the claims of rival testers in the field of personality testing. It is one in which definite harm may be done students unless the undertaking is in the hands of a counselor with an adequate background of training in psychology. Persons so trained will know the limitations of existing personality tests and will know how to use them wisely, regarding the results as experimental and tentative. There will be imparted to students only those conclusions that will be lacking in possible harmful results. Every new field of testing has ready converts, and so-called personality testing is no exception. It is often too true that the less we know about certain aspects of work the more faith we are inclined to put in anything which appears in that field labeled a "test." Most individuals working in guidance can safely wait to see what conclusions the next ten years bring forth in relation to personality tests or inventories.

Closely related to personality tests are tests of attitude. Some workers hold that personality as a whole is too difficult to define and measure, but that attitudes towards specific institutions, individuals, or situations can be "measured." A difficulty with such attempts at measurement is that one can never be sure that he is securing responses which represent true attitudes; he may be securing responses which represent the student's opinion of what the tester will approve, or the student may be trying to create an impression either favorable or unfavorable. There is very little that an attitude test will reveal that could not be secured with greater ease and accuracy through the interview or through ratings, behavior forms, or anecdotal records. Attitudes might presumably be tested in relation to a multitude of subjects. Guidance workers must bear in mind the questions of time and of value of the results. It is very doubtful that attitude tests have thus far made much or any contribution to guidance.

One other field of testing remains to be considered briefly, that of interest testing. Some writers in guidance place much faith in one of the interest tests; others seem to be more skeptical of its value. Various other interest blanks also have been developed. It is probable that much more careful research is desirable before we can be sure of the relationship between scores on the interest blanks and the other factors that must be considered in advising individuals as to the probability of their success in various occupational fields. It must be

pointed out, also, that many interests mature relatively late in one's teens or in the early twenties, so the interest blanks might give different results if administered at different periods in late youth and early manhood. The theory in the matter also overlooks the fact that new and fascinating interests may arise by exposure to new fields of knowledge or experience. The eighteeen-year-old boy with a farm background starting to college for his first experience away from home may present a very different set of interests four or six or ten years later. Do the interest blanks take into account the changes which introduction to a new environment, new friends, new fields of work may occasion? Experience in watching the development of students over a period of thirty-five years leads the speaker to be a bit skeptical about the merits of the so-called vocational interest blanks. It is better to be skeptical than gullible, in his opinion, and he refuses to believe that the evidence is wholly convincing thus far in relation to the results of the interest blanks.

This brief address has touched upon some of the uses which guidance may have for various kinds of measurement. Mental and achievement tests have been with us longest and we know more about their uses than is true for the other so-called measuring instruments. Special aptitude tests, such as those in the fields of mechanical and clerical abilities, are still in the developmental stages. Eventually they may prove much more valuable than conservative opinion now recognizes. Trade tests are achievement tests and have no function in guidance although they can sometimes be used as an aid in the placement office. Personality tests, attitude tests, and interest tests still have to prove themselves before they can be regarded as valid and reliable measures to be used in any but a tentative and experimental way by thoroughly trained workers in the field of guidance.

The Local Financing of Education

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ANY attempt to measure the efficiency with which local schools are administered must involve the problems of finance. It may be proposed as well that a failure to provide an adequate financial base will limit the quality of the program provided and the extent to which it takes account of the needs of the total population.

Those who argue for efficiency and economy in the administration of public education frequently reach the conclusion that great merit is to be found in the centralization of the support and control of our schools. The American tradition is opposed to centralization. In order to appreciate the value of home rule in education, one must weigh against the possible advantages of centralization the advantages that lie in placing large responsibility in the local governmental area.

The chief arguments advanced in support of our traditional decentralization are as follows: (1) Local control develops among the citizens of the locality a feeling of responsibility for the services to be rendered; (2) it makes possible the adaptation of the schools to the community which they are organized to serve; (3) it makes possible experimentation which may contribute to the development of new and better procedures; and (4) it permits the extension of the program beyond that which it is possible to mandate on a state-wide basis. Let us examine each of these claims for the desirability of local control.

(1) There is no other area of government in which the people have been so certainly interested as in their schools. The selection of members of a local governing body and the consideration of the problems of education before that body or in other public assembly have given the people a feeling that they are responsible for the education provided for the children, youth, and adults in their community. If a far-distant state department were to control the situation, it is easily conceivable that this local interest and feeling of responsibility would soon disappear. If our representative form of government is to be maintained, it must be based upon the intelligent participation of citizens in government. Probably there is no function of government in which all of the people are more willing to accept responsibility than in the control and administration of their schools.

(2) The local financing of schools makes possible the adaptation of the schools to the needs of the locality. There is no state in the Union in which a uniform program of education imposed upon all of the people can meet adequately the variations in environmental resources and in vocational needs of the many different localities. It will be granted that local school administration has not always taken advantage of the opportunities which local control provides. On the other hand, it must be admitted that if local control disappears

there is little or no possibility of the sort of adaptation which has been characteristic of the better educational communities throughout the United States.

(3) Closely related to the adaptation to local needs is the desirability of experimentation. Progress in education cannot be dictated from above. However adequately the central authority may seek to improve the program of education, the actual work of experimentation must be done in individual schools and school systems. The history of progress in American education is written largely in the experiments carried on locally which were later accepted by other communities and were finally adopted as a part of the fundamental program mandated by the state. Junior high schools did not originate on a state-wide basis. They were developed first in local school systems. Special provisions for handicapped children were not introduced by legislative action. Public-spirited citizens and leaders in educational administration in local communities recognized the need and undertook the experimentation which later resulted in the acceptance of special classes as an integral part of the school system. The provision for physical examinations and health service for children is a product of enlightened citizens, members of boards of education, and school administrators who recognized the need for this type of service and worked out the procedures in their local school systems. The reform of the curriculum of the elementary and secondary schools has been accomplished very largely by members of the profession working in local communities. Only after this pioneer work has been accomplished have desirable reforms been given the sanction of state requirements.

Experimentation sometimes takes the form of expanding the scope of the school services to include a larger percentage of the population; it may take the form of developing the major areas of educational service. In several states nursery schools and kindergartens have grown from small beginnings in local communities to their adoption on a state-wide basis. Vocational education was originally developed in a few localities in a few states. Later both state and federal governments participated in establishing vocational education as a regular part of the American school system. Universal secondary education which offers opportunities to all youth until they have completed the secondary school course is only now coming to be accepted; it was originally introduced as part of the expanding program in the many favored localities. The special training of noncommissioned officers of commerce and industry in business and technical institutes is now being undertaken in a few localities and will undoubtedly later come to be accepted as an important function of our public school system. One could add to these illustrations many others, such as the development of the program of adult education, the provision of higher education as a part of the local educational system, and the like.

(4) Those who argue primarily for immediate efficiency will discount the progress that has been made and will call attention to the failure of many local communities to provide an adequate program of education. They will point out that it often happens that

the local school district—township, village, county, or city—is satisfied with an outworn program of education which may have been suited to the needs of an earlier generation. They will argue that the people in the local community will starve their schools in order to keep their taxes down. They will point out that political domination of the school administration may result in handicapping the professional personnel and in this manner interfere with the development of the school system. One does not need to deny these limitations in order to maintain his faith in local control. The choice would seem to lie between the mediocrity which almost certainly will characterize a highly centralized school system and the possibility of achievement in the more progressive areas. A careful study of the history of education in the United States indicates that desirable changes have been brought to pass by virtue of local control, and that the task before us is not to abandon this American tradition but rather to find ways in which the localities may be stimulated to take full advantage of the responsibilities vested in them.

The problem of financing local school systems quite as certainly involves the structure of local government as it does the relationship of the locality to the state. All the arguments for local control are equally valid when the question of the fiscal independence of the local school board is raised. Education is a unique function of government. The easy assumption that education is only one of many services to be maintained and that it should therefore fight for its share of local revenue is not justified. It is true that the economic resources of any locality are limited; it is also true that there is no other service to be rendered which will so certainly condition the future of the community and of its citizens as will the quality and extent of the educational program provided. In a very real sense education is the foundation upon which all other governmental services rest. Only as the citizens of a community act intelligently will the public health be guarded, an efficient administration of police and fire departments be insured, and the water supply, the disposal of sewage, and care of the streets be efficiently maintained.

It is interesting to note that, in the reform of our municipal governments, boards of education have been retained. Those who have sought greater efficiency in local governments have advocated the placing of responsibility in a small group, usually called a city council, and have proposed that a business manager be given charge of the city administration. They have, however, in all but two cases felt that it was important to retain the separate administration of the schools under a board of education. This is not an accident. There has been a realization of the unique function to be served by the schools and an appreciation of the desirability of placing the control of public education in the hands of a group of citizens having no other public responsibility.

Still another major problem in the financing of schools has to do with the organization of the administrative staff of the school system. In many reports of city school surveys, it has been demonstrated that where division of responsibility in the administrative staff occurs, there is apt to be waste and inefficiency. The financial

program gets its significance only when it is closely related to or integrated with the educational program. Where a business manager of schools operates as an independent executive, it is not uncommon to find maladjustments between the business operations of the school system and the educational program provided. In many cases this separate business organization has been utilized for patronage by unscrupulous members of boards of education. Indeed, the weakest spots in the administration of city schools in the United States today are to be found in those situations in which money is wasted in the purchase and management of supplies and in the maintenance and operation of the school plant. Even where the very best service is secured, a dual administrative setup is not conducive to efficiency and economy.

Localities within any particular state vary greatly in their ability to finance an adequate program. As our economy has developed, the disparities among local communities have increased. In any state in the Union today an analysis of the situation will disclose the fact that one community may be five, ten, or even twenty times as able as is another community to support its educational program. It is because of this situation that we have come to depend upon a larger degree of participation by the state in the support of schools. Stated briefly: we seek to equalize educational opportunity through state support, at the same time guaranteeing to each locality that the tax burden in support of a fundamental program of education will be equitably distributed.

It is possible to accomplish this result in two ways. By one method the state can take over the full responsibility for supporting the foundation program. By the other and better method the state calculates the ability of each locality upon the basis of a tax rate applied to equalized assessments, and then makes the appropriations necessary to each locality to bring the total available support up to the amount required to maintain the foundation program. This second method has the virtue of maintaining local initiative and responsibility. When people know that they are taxing themselves in order to maintain schools, they will move easily into an attitude of willingness to vote more taxes in order to improve their schools. If, on the other hand, the state has paid the whole bill, the situation is psychologically different when citizens locally are asked to levy a tax which they are not accustomed to pay.

It is important to note in passing that the financing of education by the state is dependent upon greater federal participation in the support of education. Great disparities exist among the states in their ability to support education. Whether measured by wealth or income, the ability of the richest state is six times as great in relation to the number of children to be educated as is that of the poorest state. It has been determined that the application of a model tax system would not in the case of the poorer states provide sufficient revenue to maintain a satisfactory program of education.

Added to the factors of the disparity in ability of the states to support their schools and the economic interdependence of all parts of the country is the further factor of the mobility of our population.

Boys and girls born in one state move to another in their youth or adult life. Those educated in rural schools spend their period of productive endeavor in the cities. Those educated or denied educational opportunity are therefore either an asset or a liability to the country as a whole rather than to the particular state in which they were born. It is apparent that the well-being of all parts of our country is dependent upon the provision of education that is made in each locality. Ignorance cannot be segregated in the United States.

The state may interfere with the desire of the locality to maintain good schools by fixing tax limits beyond which the locality is not permitted to go. Wherever such legislation has been enacted, it has tended to restrict unduly the more progressive communities. If local responsibility is to be accepted at all, it would seem only logical to permit the people locally to vote such taxes as in their judgment are necessary and desirable for the maintenance of their schools. If in their enthusiasm they tax themselves too heavily, an adjustment will need to be made over a period of a few years. The chances are, however, that this severe taxation will not occur.

Another method of interfering with the local financing of schools has been for the state to assume authority for the control of the local school budget. While such control may not hamper communities as uniformly as does the enactment of a tax limitation law, it is apt in its administration to deny to many localities the development of the schools which they feel that they need and for which they are willing to pay. It is one thing for a state to seek to insure good management by requiring good budgetary procedures. It is quite a different thing to vest control of the budget in the central authority.

The local financing of education requires adequate budgetary procedure. This must be developed, if at all, in relation to the educational program. An estimate of costs for different divisions of the school system and a totaling of such estimates in no sense constitute a budget. It may be that the total proposed costs will balance with the expected revenues, but even this desirable relationship does not constitute a budget. Any adequate budgetary procedure starts with an analysis of the program which the school system seeks to maintain. It relates each item in this program to unit costs calculated over a period of years. If any expansion in program is proposed, there must again be a careful calculation of the cost involved. If improvements in buildings and equipment are to be made, if more generous supplies are to be provided, if curricular changes require larger staffs or more expert professional service, if new enterprises are to be developed within the general program, the cost of all of these must be as carefully estimated as is possible, and the final budget adopted must take into account all of the costs involved in relation to the tax rate to be set by the board of education.

This process depends upon adequate accounting. No one can develop a budget if he does not have available a distribution of expenditures so certainly related to the services maintained that it is possible to know certainly what changes in program will mean in the cost of maintaining it. Many local school systems have been overturned, the members of their boards of education replaced by citizens

having little or no interest in the development of the educational program, administrators and teachers discharged, all because there came a time when through lack of foresight and of careful examination of costs the burden of taxation came to be thought of as unbearable.

Good financing is not merely a matter of budgetary procedure. In many localities the management of income is of primary importance. Surveys have often revealed the existence of inadequate or unfair assessments, of property that does not appear on the tax rolls, and of other sources of income that are disregarded. It is only when all the resources which should accrue to the board of education are certainly made available for use that income management may be considered adequate.

In like manner, very great importance attaches to the quality of the business administration, whether it is concerned with the maintenance and operation of the school plant or with the purchase and management of supplies. As has been suggested above, it is possible to waste hundreds or even hundreds of thousands of dollars by permitting overstaffing in the operation of a school plant. Poor economy which may result in very greatly added costs often occurs when school buildings are not maintained adequately on the basis of a well determined program. Educational and other supplies have always added to the cost of maintaining schools where management has been inefficient or where favoritism has characterized the purchase of these supplies. The purchase of fuel should always include the guarantee of units of heat which will accrue therefrom. Educational supplies should not be made available without restriction. It is a well-established fact that principals of schools, teachers, and pupils in the classroom will be wasteful if there is no control operating with respect to the amount and character of the supplies to be consumed. No one would argue against the provision of the kind of supplies that are needed. The question is primarily one of management.

The handling of school indebtedness brings another major problem. In most growing communities it has been necessary from time to time to issue bonds in order to provide adequate school housing. These bonds have often been issued at exhorbitant rates of interest, and they have sometimes run for too long a period. Sinking funds that have been established have not infrequently been dissipated by boards of education who saw in these funds the possibility of keeping the tax rate down. The best practice requires that serial bonds be issued to run for not more than fifteen to twenty years. It is also important that the retirement of these serial bonds be arranged so that the load may be fairly evenly distributed over the period during which any of them are outstanding.

However adequately the budget may be prepared, the accounting system maintained, the management of income safeguarded, and the school properties and supplies administered, there will always remain the need for an audit. Good practice requires that the audit be conducted by responsible persons outside the local school system. It may be that the state can employ competent auditors to carry on this function satisfactorily. Where the service is not available from the state,

every local board of education should employ the services of auditors annually.

In the last analysis, the success of the local financing of schools will depend largely upon the understanding which the people of the community have of their schools and of the duties of the board of education and its administrative officers. Citizens who understand that the school's newer practices actually contribute to the better education of their children will be apt to support the board that has introduced them. Where an expansion of program has provided opportunities for a new group in the community, it is reasonable to expect support not only from this group but from all citizens of good will who understand the reasons for the wider scope of the schools. What is needed in most communities is closer cooperation with organized groups and the board of education. It is fallacious to propose that the people have discharged their responsibilities by electing their representatives to the board of education. A good board should enlist the best thinking of able representatives of labor, of business, of professional groups, of women's organizations, and of other governmental bodies. Board members should not feel that they are being imposed upon or distracted when representatives of these groups come before them to advocate changes in the school system, whether they be by way of modification of the program through restriction or through expansion. The right kind of relationships with the public requires that members of the board of education accept large responsibility for meeting with groups of citizens wherever they come together in order to explain to them the reasons for the program of education provided and the necessary costs involved.

The local financing of education presents a major problem to the local superintendent of schools. He must be aware of the relationships which should prevail in the financing of education as among the federal government, the state government, and the local school area. If he is wise he will cooperate with other enlightened members of his profession in seeking to secure support that will equalize educational opportunity not only within the state but within the nation at large. If he is to be free to carry forward a significant program, he will jealously guard the right and the responsibility of the local area to contribute to the support of its program. He will seek to eliminate unnecessary controls whether exercised by the state or the federal government. He will point out to all citizens that the interest of the community and, in the long run, of the state and the nation will depend upon the adaptation of schools to the needs of the locality. He will stress the importance of bringing into his school system modern practices which will contribute to the improvement of the educational service. Within the limits of the financial resources that can be made available, he will ask for an extension of the program to serve an increased percentage of the total population in his community. He will constantly seek to adapt his program to changing social and economic conditions. One of his greatest contributions may be found in the skill with which he provides a sound financial administration for the local school system.

Measurement in Guidance at Fort Wayne

LOUISE BRUMBAUGH, Director of Research and Measurements,
Fort Wayne Public Schools

MEASUREMENT in guidance at Fort Wayne has developed gradually, conservatively. Measurement of the more objective type is a much older service in Fort Wayne—as is probably true in most school communities—than is the specialized function or department labeled "guidance." Measurement has concerned itself more intensively with grades one to six. Guidance has proceeded downward from high school. Somewhere in grades seven and eight the two functions first met.

Probably because guidance, as a recognized and acceptable function, made its appearance at a time of economic stress when measurement was hard pressed to justify its very existence, measurement in guidance has had to be extremely self-critical, to prove its practical utility every step of the way. Moreover, certain vague, intangible qualities of some phases of guidance have made objective measurement almost impossible. On the whole, however, the resulting skepticism has probably had a good therapeutic effect upon both measurement and guidance.

The public school setup in Fort Wayne is briefly as follows: three high schools with grades 9 to 12 inclusive; eight schools with grades kindergarten to 8A; fourteen city schools, with some variation of grades kindergarten to 6A inclusive; one prevocational ungraded school for slow-learning adolescents; and one school for children with physical handicaps. Our school population totals about 17,000. All of the high schools offer the college preparatory, the business, and the general curriculum, while one of the schools offers the vocational course. Each high school and each of the schools with grades 7 and 8 has its guidance committee or department. Considerable freedom has been given each of these schools in developing its guidance program in accordance with its own particular pupil needs and its teacher potentialities. As the guidance program has been individualized, so has inevitably been the amount and kind of measurement done. This is particularly true in the three high schools.

The Bureau of Research and Measurement, among other functions, administers or distributes practically all of the tests used in the public schools from preschool through 12A. The services of the Bureau are rather well standardized from kindergarten through 8A; in high school its services are extended only when and where requested.

Although measurement in guidance implies measurement for purposes of guidance alone, and restriction to grades 7 to 12 where guidance as a specialized department has commonly been localized, it does not seem fair or wise to ignore measurement in grades 1 to 6 which yields data of great value to subsequent guidance. Our measurement program in Fort Wayne is planned to serve several different purposes —instructional, survey, diagnostic, and guidance, among others. In

such dispersion our program undoubtedly does not serve any one purpose as adequately as it could were it planned solely for that one purpose, but we have always to remember in a public school situation that economy is the first and last line of defense. Having therefore justified our program, at least in our own estimation, we shall proceed to describe briefly the measurement which directly or indirectly supplies the guidance information about pupils.

Group general intelligence tests are given each semester to all beginning 1B pupils and to all 8B pupils. In addition to this regular schedule, group tests are given each semester to all pupils for whom teachers, principals, supervisors, or parents may wish a retest. Thus every pupil spending twelve years in the Fort Wayne Public Schools has at least two group intelligence tests and usually three or four. Group tests in the high schools are usually given once a year to pupils new in the schools and to pupils needing retests. The problem of placing new pupils without any mental test data has become so difficult in one of our high schools enrolling many parochial and out-of-the-city students that we are now planning to give group tests to such pupils a week before the opening of school next fall.

Results of group intelligence tests are reported to schools by mental ratings. The mental rating does not imply the exactness and finality of measurement formerly expected of the I.Q., which is altogether in favor of the mental rating. Moreover, the mental rating, while not giving the level of maturity except as used in conjunction with the chronological age, has a permanent value not possessed by the mental age which must, of course, be computed for each month.

Individual tests of intelligence are given to pupils presenting special problems with respect to placement, attendance, quality of work, emotional adjustment, social behavior, etc. Our requests for individual examinations come from teachers and principals, of course, but also from guidance directors, the attendance department, the visiting teacher, the school welfare worker, the juvenile court, the probation department, and public and private social welfare agencies. We also do some work for the Catholic and Lutheran schools of the city.

As all of you here know, the individual test in the hands of a skilled examiner becomes the interview method. The situation usually yields considerable information with respect to home, school, friends, etc. Even the adolescent who is frequently self-conscious and on the defensive—especially if he is a "problem" to himself and others—incidentally reveals much about his attitudes, experiences, and emotions while he is concentrating upon his responses to test stimuli. Certain words on the Binet Vocabulary Test, for example, lend themselves naturally to casual, friendly conversation. From the word "envelope" we frequently ascertain the degree of attachment for friends and relatives outside the city; from "straw" whether or not there have been farm experiences; from "gown" whether mother or sisters engage in certain social activities, and sometimes how many movies the youngster sees. From "muzzle" we learn the reaction to pets, and "brunette" has unlimited possibilities as a stimulus word. This may not be measurement, as you would define it, but it is a source of information about students.

Results of individual intelligence tests are reported numerically in test age, test quotient, and mental rating. An effort is usually made also to point out specific strengths and weaknesses psychologically which may affect school success and indirectly many other aspects of the youngster's reactions. Performance tests are used to supplement the Stanford Revision of the Binet Scale in certain instances.

Considerable use is made of mental ratings in the distributive phases of guidance. We believe that we in Fort Wayne are far away from believing homogeneous grouping possible, even if wise, and from attempting to group on the basis of mental ratings alone. The mental rating, however, is one of the several factors considered in deciding in which instructional or learning group a pupil shall be placed. In the educational and vocational guidance preparatory for entrance to high school, the definitely slow-learning pupils (as judged by several mental ratings, by educational test performance, and by school marks) are discouraged from electing the college preparatory course. This is no longer so difficult a task since much of the halo and social prestige have been removed from the college preparatory course, college education, and the professions. These slow-learning pupils ordinarily distribute themselves rather evenly, for the city as a whole, among the general, the business, and the vocational curricula. As would be expected, the immediate interest now is in industrial, vocational work. The other large phase of negative guidance, that of directing the above-average students toward the college preparatory course and away from vocational in particular, has almost disappeared in the past few years because of radical changes in public attitude and because of differentiation in our business and vocational courses. With general (nonvocational) business and with commercial (vocational) business courses, with technical vocational, and with nontechnical vocational courses, and with many elective subjects in each course, the school offering has become sufficiently rich and varied to attract the above-average student in any direction in which his interest may lie.

We have used most of the better-known group intelligence tests since we began our testing program in 1922. In grades 7 to 12 we have found the Otis Self-Administering and Quick-Scoring tests to be highly satisfactory with respect to pupil interest, ease of scoring, cost, time for administering, and reliability. We find a high correlation between results on the Otis tests and performance on the Binet except in cases of serious reading disability and those isolated cases in which chance fluctuations may exist between any two tests.

For the past two years we have given the American Council on Education Psychological Examination for High School Students to all of the seniors in one high school. Indiana University did the machine scoring for us this year. The percentile rank of each student in his class (12B or 12A) has been computed for his linguistic, his quantitative, and his gross performance. These rankings have been used in individual counseling to acquaint the student still further with respect to his general potentialities and his specific strengths. Institutions of higher learning and the personnel departments of business and industry are becoming more and more eager to secure these objective data regarding pupils' rankings. In addition to these values

the psychological examination of the American Council type provides young people with an experience which prepares them, at least emotionally, for test experiences which many of them will have later at college or in employment.

Our achievement testing program in grades 2B through 8A provides for city-wide testing periods three times every year: at the beginning and end of the first semester, and at the end of the second semester. Standardized tests in reading are offered from 2B through 8A to alternate classes. Standardized tests in arithmetic are offered from 4B through 8A to alternate classes. Thus a class or grade (4B or above) which is eligible to have reading tests three times this year will be eligible to have arithmetic tests three times next year. This procedure gives a periodic check on the two tool subjects and yet cuts down the costs and clerical burden that a more comprehensive program would entail. In actual practice, of course, many teachers order both reading and arithmetic tests for each testing. Also recently it has been arranged for 8B classes to have both reading and arithmetic tests so that the results will be available in time for use in high school program making. As previously mentioned, educational test data are used in guidance most frequently in regard to placement, and in counseling on the quality of work done.

Our high schools have made sporadic requests for reading tests until recently. This year all the 10AB's in one high school were given the Iowa Advanced Silent Reading Test, machine scoring. These tests were also scored for us through the courtesy of Indiana University. The Iowa results will possibly effect some curricular readjustment as well as pupil reclassification in English and other classes. The significance of reading skills to the academic success of a pupil, and indirectly to many aspects of his adjustment and behavior, is just beginning to break upon the consciousness of many high school teachers—and I am not speaking for Fort Wayne alone at this point.

Tests in subjects other than reading and arithmetic are given as specific needs arise, but for guidance purposes objective information about a pupil's proficiency in the two R's usually means as much as his performance on a battery. Some of our high school people have searched several years for a suitable standardized test in order to give pupils, especially seniors, the experience of taking a battery of educational tests. However, to date no battery has been found in which the curricular content seemed even to approximate our local curricular offering.

Scattered use has been made of interest inventories in the high schools. The Brainard-Stewart "Specific Interest Inventory," the Garretson-Symonds "Interest Questionnaire for High School Students (Boys)," and Cleeton's "Vocational Interest Inventory" have been tried out at different times for different purposes. Sometimes the inventory has been used in isolated, individual cases, sometimes with whole classes as a stimulating, motivating device for group discussion or for subsequent individual counseling. It has been pointed out innumerable times that the validity of any interest inventory is dependent upon the subject's knowing in what he is actually interested, and being willing to tell it to someone else. The cases in which we

are the most anxious to discover the real, underlying interests are frequently the cases in which the subject is emotionally inhibited so that he cannot or will not make accurate responses. We rarely if ever, therefore, ascribe any great predictive value to an interest inventory.

Personality and adjustment inventories are liable to perhaps even more serious errors of subjectivity than is the interest inventory. It is almost inevitable that any normal human being in reporting his own personal reactions will be more concerned about being socially acceptable than being morally honest. We have found the Bell "Adjustment Inventory" to be helpful, usually in substantiating what we already knew or suspected about an individual. Bell's four categories of adjustment—home, health, social, emotional—are much more practical in a public school situation than are some of the erudite classifications with the psycho-analytic flavor.

A rating plan for personality and character traits, locally designed and printed, is used in our high schools. It is also being adapted and varied in several of the eighth grade schools. In one of the high schools every pupil is rated at least three times during his four-year stay, each time by all of his teachers. The composite rating, representing the judgment of four or five teachers, tends to smooth out those individual differences of attitude and opinion in teachers regarding their pupils. At this same school the rating scale is used by students to rate themselves, when they are sophomores and again when seniors. Comparisons between self-ratings and between self- and teacher-ratings supply material of real interest and value for discussions, activities, assemblies, and interviews.

Pupils may secure their composite ratings from the Dean of Girls or the Guidance Director of the school. This gives an opportunity to prevent possible misunderstandings and to discuss pupil problems of a personal nature. Pupils with low ratings may be called in for an interview if they do not come voluntarily. The ratings are available to colleges, universities, and prospective employers to make possible better placement and adjustment, although this use of the rating data is secondary to pupil growth and improvement.

Our rating scale which is in general use is a five-point scale. There is a full, clear definition of terms for those who do the rating. Three of the seven traits are classified under personality: personal appearance, social adaptability, courtesy, and four under character: trustworthiness, dependability, industry, civic responsibility. The rating scale—when sufficiently specific and well-defined to eliminate ambiguities, when used by enough persons to minimize personal prejudices, when employed frequently and systematically enough to show progress and stimulate further development—can be a most serviceable, inexpensive tool for gathering material of practical value to both group and individual guidance. It is needless to say that the intelligent, sympathetic cooperation of the entire school body—administrative, instructional, and pupil—is necessary to get the maximum benefits from such a plan.

Our measurement of vocational aptitudes has been limited to some experimentation with the clerical and mechanical. This year we have

given the revised Detroit Mechanical Aptitude Test to all 9AB boys enrolled in the vocational course. The results will be used in conjunction with pupil success in rotating shop work to determine reclassification. The Detroit test is also being given to some of our 8A boys to help in making a decision between mechanical and nonmechanical vocations. Boys of high general intelligence and high mechanical aptitude will be encouraged to work toward engineering, aeronautics, etc., *via* the college preparatory course. Boys of lower general intelligence and high mechanical aptitude will be directed toward the technical classes of the vocational course.

We have as yet felt no urgent need in Fort Wayne for academic prognostic tests when we have available scholastic marks, the results of several general intelligence tests, and the results of recent tests in reading and arithmetic. The slightly increased predictive value given by a prognostic test under these circumstances does not seem to warrant the extra effort or expense. The standardized prognostic test dare not be too specific lest it lose curricular validity for many situations. In becoming generalized to basic concepts and skills, the academic prognostic test frequently is reduced to those same skills included in tests of general intelligence and educational achievement.

Another phase of our measurement, which some of you may consider neither measurement nor guidance, involves the testing of hearing and eyesight with the audiometer and telebinocular, respectively. This type of testing is usually grouped, in guidance literature, with general health examinations as contributing valuable data to guidance but not as being a primary concern of guidance. You may, quite obviously, limit your own guidance program wherever you wish, but it is my deep conviction that accurate information about a pupil's sensory efficiency is just as important to him and to guidance as any other measure yet devised. For example, poor eyesight, whether the defect be refractive or functional, may be a contributing cause to a disability in reading and thereby to a disability in all of the content subjects. Such a deficiency may cause eyestrain which will result in headaches, nausea, inability to concentrate on visual material, irritability, and a general indisposition to work. This condition certainly affects the quality of work a pupil does. It may affect his behavior. It deserves serious consideration in both educational and vocational planning.

Perhaps too much of our measurement everywhere has concerned itself with skills, traits, and attitudes of many pupils rather than with the evaluation of any individual as a whole and separate entity. Mass measurement needs to be supplemented by more diagnostic study. The "child-centered school" has been heavily publicized. Child-centered evaluation, in which no lines of specialization or delimination are allowed to interfere with our getting all possible information about a child and using it, seems to be still in an embryonic state. We should be able to be scientific without resorting to vivisection.

It is not presumed that our measurement program in Fort Wayne is ideal. We hope it is sane and fundamentally sound. More of our measurement is for guidance than in guidance, strictly speaking. We

consider our testing in general intelligence and in the tool subjects of reading and arithmetic as basic. Measures of interest, attitude, special aptitude, personality, auditory acuity, visual efficiency, etc., supplement the regularly scheduled testing whenever and wherever the need seems to justify the expenditure. We realize that the intelligent, judicious, and full use of test results, which is requisite to any successful measurement program, can be attained only through eliciting the whole-hearted support of the instructional body. Neither measurement nor guidance can be any more effective than those individuals who administer it. That is, we in Fort Wayne believe that measurement imposed from the top is meaningless, futile; that no measurement program for any purpose can justify its existence unless the maximal use of its results is insured through a carefully developed readiness in the teachers who apply the results to pupil situations. We work and wait for measurement maturity.

Scholarship Testing

FRANK R. ELLIOTT, Chairman,
Committee on Scholarships, Indiana University

THE biggest job of scholarship testing in Indiana has been completed. We have just selected about 600 state scholars from among 2,500 candidates. This seems a good time for a review of procedures, an evaluation of results, and the making of plans for next year.

As a matter of fact, the chairmen of the State Scholarship Committees in the four state-supported higher institutions of Indiana are here today making plans for next year. They will assist us, I hope, in our discussion of scholarship testing. We have Principal B. E. Myers here from Connersville to tell us of the experiment of county-wide testing in Fayette County this year. We have secondary school officials here to tell us their experiences and give helpful suggestions.

The value of scholarship testing.—Is scholarship testing worth while? Is it worth our time and money? Is it as good an index of college success as ranking in the high school class?

Let us look at some evidence. The college registrars and admissions officers have repeatedly studied the question, since they often have the responsibility for administering scholarship examinations. Here are some of their findings in recent years as reported in their journal.

1. At Temple University, a positive correlation of .68 was found between success in high school and success in the freshman college year as measured by grades. A positive correlation of .52 was found between success on tests and success in college freshman subjects. A positive correlation of .45 was noted between the principals' predictions of college success and actual success in college. A very low positive relationship existed between interviewers' judgments of college aptitude and actual success in college.

2. At the University of Minnesota, a positive correlation of .42 was found between rank on aptitude examinations and success of college freshmen, and a positive correlation of .58 between high school class standing and college success. The author concluded that rank in high school class is a better index of college success than rank on aptitude tests.

3. Those in charge of the Ohio state-wide testing program found that students ranking in the highest tenth on tests had a scholastic index in college of 4.6 or B+, while those in the lowest tenth had an index of 3.3 or C+. Correlations between success on the tests and success in college were all positive and ran as high as .83. The higher the rank on the tests, the longer the student remained in college.

4. Speaking before the registrars and admissions officers in 1936, Bernreuter summarized scholarship testing research in this way. The guessing error in predicting college success, he said, is reduced as much as 36 per cent by taking into account the high school record, 29 per cent by observing the results of *general* aptitude tests, 25 per

cent through results of *special* aptitude testing, and 41 per cent by considering a combination of three indicators, namely, (1) success in high school, (2) success in general aptitude examinations, and (3) success on English examinations.

It is interesting to note that the combination which Bernreuter found best is the one now used in the state scholarship testing program in Indiana.

5. At Allegheny College a study disclosed that scholars selected without tests had lower college grades than scholars selected with tests. To get closer home and to bring this survey up to date, let us consider two studies at Indiana University during the present school year.

In September of 1940, 134 freshman candidates for state scholarships who had not won scholarships entered the University. They had been chosen as candidates from their high schools to take the tests and, therefore, may be considered as a selected group. They received 326 hours of A grades and 251 hours of D or F grades during their first semester at Indiana University. By comparison, the 103 students who won scholarships made 507 hours of A and 43 hours of D or F grades during their first semester.

Again, at Indiana University last semester, 66.7 per cent of those freshmen making A grades in English composition ranked in the highest tenth on the Comprehensive English test in September, 1940, and had no D or F grades in English composition. On the other hand, students ranking in the lower 30 per cent in the Comprehensive English test made 83 per cent of the D grades and 88 per cent of the F grades in English composition.

At Indiana University, as in other higher institutions generally, those students who rank highest on the tests are the ones who usually make the best grades and usually remain longest in college.

It seems safe, therefore, to conclude that as a general rule scholarship testing offers a good prediction of college aptitude and college success. Particularly is this true when there is a marked consistency between success in high school and success on the tests. When one is high and the other is low, there is cause for doubt. We know of cases where students have scored high in high school, low on tests, and high in college. We know the reverse. But, generally speaking, the evidence in favor of scholarship testing seems definite and positive. We may conclude that the exceptions only prove the rule, even in the case of the Minnesota study which indicated that scholarship testing is no better than rank in high school class.

Sometimes we hear the complaint that scholarship testing is not valid because it is in the nature of a "crisis." But in our practical, everyday life we have to meet crises and even college students have to rise to extra demands on their resources. It is well to know how students perform routine tasks and rate on regular tests, but it is a good thing also to see how a young boy or girl is able to rise to the demands of an examination. It tests the stability factor, which is an important factor in any kind of higher learning.

Scholarship testing has the advantage of providing a common basis of judgment amidst the varying standards which we all know

are bound to exist among the hundreds of high schools in Indiana.

Administration.—If scholarship testing is worth while, how would the tests be administered? At present in Indiana the state scholarship tests are administered under the instruction of the four state scholarship chairmen by staff members in the high schools. On previous occasions I have pointed out to Indiana secondary school officials some evidence of variation in procedure from one school to another. Just two weeks ago I discovered by accident that one candidate was given the state scholarship examination twice. On one trial he scored at the 99th percentile on the General Aptitude Test and at the 73d percentile on the English test. On the other trial, he scored at the 100th and the 83d percentiles, respectively, thus indicating the value of his practice. When asked about this, the school official stated that she thought this was permissible. Further, she would appreciate full consideration for her excellent candidate.

I have advocated, as you know, some group administration of the state scholarship examinations, such as that tried out for the first time this year in Fayette County. Suppose we had a county-wide program in Indiana for testing the aptitude of seniors interested in college, all seniors, or even all juniors. Suppose the results of these tests could be made available to the colleges. If this were done, it is my opinion that we would come a good deal nearer to the desirable goal of attracting to college a higher percentage of the better-qualified high school seniors.

This seems to have happened in Ohio. Forty-five per cent of the seniors taking the tests and ranking in the upper tenth received offers of college scholarships, and 29 per cent of the entire group received such offers. The testing program thus seems to be bringing definite financial assistance to many worthy high school seniors in Ohio.

One study shows that scholastic mortality is lower for those coming directly from high school to college than for those who remain out of college for a time and then come in. A testing program should help pave the way for immediate continuance in college.

I believe in a scholarship testing program in Indiana not merely for candidates for scholarships but also for all high school graduates who offer promise of being good college material.

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Personnel Problems in City School Administration

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AMONG the many problems with which the school administrator must deal, those having to do with personnel are most significant. Indeed, it may be proposed that personnel policies are the central consideration in all administration. The adjustment of schools to the needs, the capacities, and the vocational outlooks of the pupils enrolled in them is of primary importance. The relationships existing between pupils and teachers and among pupils will in many cases affect the achievement of boys and girls. The organization of schools and classes may be a most important factor in determining the degree of success achieved by the pupils enrolled.

In an earlier day, in discussions of the problems of pupil personnel, great emphasis was placed on retardation and elimination. Thirty years ago half of all the boys and girls enrolled in American schools failed to complete the work of the elementary school. It was not unusual in their earlier period for from ten to thirty per cent of the pupils in any given grade or class to fail of promotion at the end of the year or, where schools were organized on a semi-annual basis, at the end of a semester. Retardation was considered a normal phenomenon.

In order to remedy this situation and in the light of growing knowledge of individual differences, school administrators sought through homogeneous grouping of pupils to alleviate what was acknowledged as a bad situation. They assumed that, on the basis of the scores made on an intelligence test or a general achievement test, it would be possible to place children in groups where their progress would be fairly uniform. Experience demonstrated, however, that abilities in the several fields represented in the curriculum were not so highly correlated as to insure that grouping on any basis would result in uniform achievement in all subjects. There has been a tendency therefor to abandon homogeneous grouping and modify our teaching practices to take account of the variations which exist among any group of children assembled in a class.

Formerly too great dependence was placed upon measures of intelligence, not only in the classification of pupils but also in our expectation with respect to their continuance in school. The situation that exists at present, in which all boys and girls continue through the elementary school and two-thirds of them enroll in secondary schools, has called for a modification of our earlier practice. Few studies of pupil personnel in these days give any considerable attention to the problems of retardation and elimination. We know that failure and retardation are not good adjustments for pupils. We have had to revise our program in the light of a better understanding of the purposes of education and increasing knowledge of educational psychology. Whether or not we acknowledge the validity of Gestalt or

organismic psychology, all of us today place greater emphasis upon the significance of the emotions in education. We know that emotional disturbances interfere with intellectual activity. None of us doubts that the physical condition of the pupil is a very important factor in determining his behavior as a student. The emphasis upon guidance which is characteristic of our modern attack upon personnel problems is another evidence of a changed conception of the nature of our pupils.

This new orientation with respect to pupils has led to very important changes in the curricula of the schools as well as in teaching practice. Curriculum revisers for the past ten or fifteen years have concentrated on an effort to give significant experience while recognizing the importance of a command of the tools of inquiry. We have attempted to relate the teaching of the knowledge and skills, formerly taught as discrete subjects, to the experience which children have in school, in their homes, and in the community. It is true that we have not been wholly successful in bringing about this reorganization of the curriculum, but considerable progress has been made through the development of core curricula, through the combination of subjects, through the introduction of large units of work, and the like. Emphasis has been given, as well, to the relationship of schools to homes and to the community. This has often resulted in a better understanding of the background in experience already possessed by children and of the limitations of their environments.

If one were to try to summarize the attitude of progressive teachers and administrators to the boys and girls enrolled in the schools, he might propose that we no longer seek to adjust children to a traditional curriculum but rather that we seek to develop experiences in school closely related to the needs of our pupils and definitely concerned with their living and working in our modern society. Another result of the change in our ideas with respect to pupil personnel is to be found in the acceptance of the idea of universal education through the secondary school period. We can no longer rest satisfied with a program of education ending at fourteen or fifteen years of age, as was formerly the case. Our current economic situation offers little or no opportunity for work for boys and girls until they are eighteen or nineteen years of age. The need for providing education for all youth is bringing about a modification in the curricula of the secondary schools just as certainly as in the elementary field. There is of necessity more attention given to the vocational education for a considerable percentage of this group. General education with emphasis upon citizenship, healthful living, and appreciation of literature, art, music, and science, has taken the place of subjects which often had little or no meaning for a considerable percentage of the secondary school population. We are accepting the idea of an extension of the secondary school. Many localities are offering education to young people up to twenty years of age, that is, two years beyond the present high school level. In some cases this work is organized after the pattern of the freshman and sophomore years of our colleges. In other cases an even more important contribution is being made in the development of business and technical institutes in which boys and girls who are not going

on to college or university may have opportunity to prepare themselves for positions of leadership in business and industry. The same type of work is being offered in the field of agriculture.

We may not be so certain of results in this new attack upon the problems of pupil personnel as we were in those days when we had our measurements of achievement, of intelligence, and of progress through the school system. No one would deny the usefulness of these measures. We shall continue to measure intelligence and achievement, but with a different purpose. We seek now to know all that we can about boys and girls in order that we may help them to realize the most and best of which they are capable. We place emphasis upon desirable human relationships and not merely upon individual achievement. We are concerned with a type of education which may lead to economic efficiency and not merely to the acquiring of a diploma. In the organization of the school and of the activities of pupils we stress the acceptance of responsibility. We are concerned with the activities of children not only in school but in the community. We seek to develop a group of boys and girls and of youth able to use such intelligence as they possess, emotionally stable, and controlled by the ideal of devotion to the common good.

The competent administrator has always devoted much attention to the problems involved in teacher personnel. No administrative act is more important than the selection of teachers and their assignment to work within the school system. Young men and women coming out of our teachers college and from our universities vary greatly in their professional promise. It is the duty of the administrator, in terms of the record made in the professional school and through personal interview, to select those who give the greatest promise of successful achievement in teaching.

The initial selection of teachers, however, may not be as important as is their later growth. There was a time in the history of American education when the administration assumed responsibility for directing teachers. Courses of study were prepared, textbooks were selected, and the teachers were expected to follow slavishly the organization of knowledge contained therein. Rules and regulations were adopted by boards of education and promulgated by the superintendent of schools. Close supervision required conformity to established methods of procedure. Out of this situation there was little growth to be expected.

The modern superintendent of schools works as a professional leader with teachers. He and his associates of the administrative staff help teachers to discover the problems with which they are mutually concerned. Groups of teachers having common problems seek their solutions not only by consulting sources of information in the researches in education but also in the exchange of experiences. Workshops have been organized in many school systems that bring teachers together over a period of a year or more in an attack upon their common problems. Curriculum construction committees are organized. It is assumed that all teachers have the possibility of contributing to the development of better practice.

Teachers are expected as well to contribute to the development of

school policy beyond the work of teaching and the development of curriculum. This participation in the formulation of educational policy should not be thought of as a favor granted by the administration but rather as a right and an obligation. Some plan should be provided through which the constructive thinking of all the workers in a school system may be utilized. After policies have been developed by the staff they should be submitted to the board of education for final review and approval. When approved, every member of the school system for whom the policy has implications becomes responsible for carrying it into effect. This procedure promotes efficiency through individual understanding of policies and through the acceptance of joint responsibility for carrying them into effect. What is far more important, it provides a democratic process through which growth in service is promoted, and the school system itself profits from the application of heightened morale and of group thinking to school problems. It makes the school in reality a unit of democracy in its task of preparing citizens for our democratic society.

In addition to the selection of teachers and the promotion of their growth in service, the administrator must deal with the problems of salaries, tenure, and retirement. In most progressive school systems in the United States, salary schedules are based upon educational qualifications and successful experience in teaching. Good practice demands that there be a period of probation before tenure is established.

One of the most difficult issues confronting the administrator concerns the tenure of those who cease to be efficient. Teachers and administrative officers need to study this problem and reach some more satisfactory solution than has yet been found. It is possible under most tenure laws now in existence for teachers who have tenure to rest upon this guarantee and fail to keep step with professional progress. While such teachers are in a minority, they constitute a very great handicap to the work of any school system. It would seem reasonable to propose that professionally-minded teachers would be willing to work with administrative officers and laymen for the development of a system of tenure based upon continued professional efficiency. There can be no satisfactory handling of the problem of teacher personnel except upon the bases of a fixed age for retirement and the provision of an adequate annuity. Nothing is more destructive of good practice than the continuance in service of those who are no longer physically or intellectually able to do professional work of a high quality.

While it is true that there will always be opposition to any rule that may be established, many studies that have been made indicate the desirability of terminating the services of teachers at from sixty-three to sixty-eight years of age. Possibly the most common retirement age accepted is sixty-five. Pension systems based upon contributions by teachers and by the board of education are necessary if retirements are to be enforced. No board of education and no group of citizens in the community will be willing to dismiss teachers unless some adequate provision is made for their support.

School administrators have given too little attention to the non-

professional personnel. Not infrequently members of boards of education and sometimes politicians not serving on the board have been responsible for the selection of custodial workers and even the members of the clerical staff of the school system. Good practice demands that the nonprofessional personnel be selected with as great care as are teachers. They should be thought of as working in cooperation with the professional staff of the school system for the achievement of the aims of education. They cannot be thought of as meeting their full responsibility merely because of their technical competence. Just as certainly as the teaching personnel should grow in service, so the good administrator will make provision for the upgrading of the nonprofessional personnel. In some school systems today initial training is provided for these employees. This is not enough. Any worker in the school system should feel that by improving the quality of the service he renders it is possible for him to move up in the scale and to have a corresponding increase in salary. It is also highly desirable that the nonprofessional personnel, being carefully selected, enjoy tenure on the basis of efficient service rendered, as has been proposed above for the teaching personnel. It will be necessary as well to provide for the retirement of and annuities for this group of workers.

Most significant changes have been brought about in personnel administration during the past twenty years. The major emphasis today is placed upon the worth of individual personality. In working with children and youth in the schools we no longer seek to have them conform to a predetermined pattern and program. We attempt rather to discover their abilities and to provide experiences which will contribute to their growth. This changed attitude has called for modification in the curricula. It places emphasis upon successful achievement rather than upon uniform standards of excellence.

In like manner, personnel administration has accepted new responsibilities in dealing with school employees. Excellence in administration is measured by the growth of teachers in service. Teachers are expected to assume large responsibility for the development of curricula. They are asked to participate as well in the development of general administrative policies. Modern personnel administration at its best is essentially democratic.

A List of Bulletins in the Field of Education, Indiana University

By KATHLEEN DUGDALE

The School of Education at Indiana University has published the following bulletins. All of these may be obtained from the University Bookstore for 50 cents unless otherwise noted.

Proceedings of the High School Principals' Conference (November 23 and 24, 1923). Vol. I, No. 1, 1924. 85 p. (Supply exhausted.)

Investigation of Nursing as a Professional Opportunity for Girls, Part I, Technical Study; Part II, Vocational Information Bulletin. By Florence E. Blazier. Vol. I, No. 2, 1924. 69 p.

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First Revision of the Bibliography of Educational Measurements. Compiled by the Bureau of Cooperative Research. Vol. I, No. 5, 1925. 147 p. (Supply exhausted.)

Proceedings of the Twelfth Conference on Educational Measurements. Vol. I, No. 6, 1925. 76 p.

The Effect of Population upon Ability to Support Education. By Harold F. Clark. Vol. II, No. 1, 1925. 28 p.

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A Cross-Indexed Bibliography on School Budgets. By Harold F. Clark. Vol. II, No. 3, 1926. 66 p.

A Comparison of the Results Made on Certain Standardized Tests by Pupils in the Bloomington High School Who Were Taught in Classes of the Same Grade by University Student Teachers and by Regular High School Teachers. By Carl G. F. Franzén. Vol. II, No. 4, 1926. 19 p.

Proceedings of the Thirteenth Annual Conference on Educational Measurements. Vol. II, No. 5, 1926. 103 p.

When to Issue School Bonds. By Harold Florian Clark and Paul Royalty. Vol. II, No. 6, 1926. 16 p.

Students' Attitude Toward Examinations. By Grover T. Somers. Vol. III, No. 1, 1926. 48 p.

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Proceedings of the Fourth Annual Conference on Elementary Supervision. Vol. III, No. 5, 1927. 64 p.

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Some Phases of the Junior College Movement. By I. Owen Foster, Harold F. Clark, Willard W. Patty, and Leo M. Chamberlain. Vol. IV, No. 1, 1927. 125 p. (Supply exhausted.)

Second Revision of the Bibliography of Educational Measurements. By Henry Lester Smith and Wendell William Wright. Vol. IV, No. 2, 1927. 251 p. (75¢)

Bibliography of School Buildings, Grounds, and Equipment, Part I. By Henry Lester Smith and Leo Martin Chamberlain. Vol. IV, No. 3, 1928. 326 p. (75¢)

Proceedings of the High School Principals' Conference (November 18 and 19, 1927). Vol. IV, No. 4, 1928. 54 p.

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Proceedings of the Fifteenth Annual Conference on Educational Measurements. Vol. IV, No. 6, 1928. 73 p.

Proceedings of the Fifth Annual Conference on Elementary Supervision. Vol. V, No. 1, 1928. 54 p.

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